CLAIMS

1. A spatial light modulator wherein a plurality of micro mirrors are arranged in an array configuration on a substrate and an inclination of a reflecting surface of each micro mirror can be independently controlled to one of two reflection angle states by an electrostatic attracting force exerted between the substrate,

the spatial light modulator being characterized by providing a reflection angle distribution to each micro mirror such that collimated light incident on the micro mirrors is reflected to be converged at one point for one of the reflection angle states.

2. A spatial light modulator wherein a plurality of micro mirrors are arranged in an array configuration on a substrate and an inclination of a reflecting surface of each micro mirror can be independently controlled to one of two reflection angle states by an electrostatic attracting force exerted between the substrate,

the spatial light modulator being characterized by providing a reflectance distribution to the micro mirror array.

3. The spatial light modulator according to claim 2 wherein the reflectance distribution is set to an almost inverse proportion to a Gaussian distribution such that incident light with a Gaussian distribution light intensity is formed into reflected light with a uniform light intensity

distribution for one of the two reflection angle states.

4. The spatial light modulator according to claim 2 or 3 wherein the reflectance distribution is provided by adjusting a film thickness of a reflectivity modulation film provided on a surface of the micro mirror for each micro mirror.

5. The spatial light modulator according to any one of claims 1 to 4 wherein a surface on which the micro mirrors are arrayed is a concave or convex curved surface.

6. The spatial light modulator according to claim 2 or 3 wherein the reflectance distribution is provided by arranging a mask plate, whereon micro apertures are formed at the same quantity and same pitch as the micro mirrors, on a front surface of the micro mirror array, the micro apertures having an area smaller than the micro mirrors, inclining the micro mirrors to a parallel surface of the mask plate in at least one of the reflection angle states thereof, and adjusting an inclination angle for each micro mirror.

7. The spatial light modulator according to claim 2 or 3 wherein: the micro mirror array is provided with a non-reflective region on a periphery of each of the micro mirrors; a mask plate is arranged on a front surface of the micro mirror array, the mask plate having micro apertures at the same pitch as the micro mirrors; and the mask plate can change its position so as to change an overlapping area of the micro apertures with respect to the micro mirrors, thereby

substantially providing a reflectance distribution for the micro mirrors.

8. The spatial light modulator according to claim 7 wherein the mask plate is arranged parallel to the surface of the micro mirror array and also is able to freely rotate by any angle around an axis perpendicular to the surface.

9. The spatial light modulator according to claim 6, 7, or 8 wherein the mask plate is able to freely adjust the rotation angle around an axis parallel to the surface of the micro mirror array.